

MULTIMEDIA



UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 3, 2021/2022

**DSD 5411 – SYSTEMS ANALYSIS AND DESIGN**

**(DIT)**

9 AUGUST 2022  
09.00 a.m – 11.00 a.m  
(2 hours)

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### INSTRUCTIONS TO STUDENTS

1. This question paper consists of **THREE (3)** pages.
2. Answer **ALL** questions.
3. Please print all your answer in the Answer Booklet provided.

**STRUCTURED QUESTIONS (40 MARKS)**

**Instruction:** *Answer all questions and print your answer in the answer booklet provided.*

**QUESTION 1 (10 MARKS)**

Score A Tuition Centre conducts home tuition in Melaka. Any person who is interested to become a teacher must *register* through Score A Tuition Centre (SATC), then the information will be stored in Teacher\_Info record.

The registered teacher must also *update* his or her personal schedule, so the centre can arrange and plan slots that fit for him or her. All the updated personal schedule will be stored in Teacher\_Schedule record.

When there is a new request for home tuition, the clerk will *add* the information of new request, such as proposed date and subject. All data will be stored in Tuition\_Request record.

The clerk will propose a teacher that is suitable with the request, then he or she *reserves* the teacher by entering the teacher ID and the tuition date. All of the information is obtained from teacher personal schedule and teacher's record.

The system *generates* a complete schedule of the centre. The teacher and clerk can view or print it. The complete schedule is retrieved from Teacher\_Schedule and Tuition\_Request and all data will be stored in Class\_Schedule.

Based on the case described above:

- a) Draw a *Context-level diagram*. [2 marks]
- b) Draw a *Data Flow Diagram (Level 0)* for Score A Tuition Centre (SATC) by showing general processes, data stores, data flows, and sources or sinks. [8 marks]

**Continued.....**

**QUESTION 2 (10 MARKS)**

Table 1 shows the activities, dependencies, and estimated times a project manager might input to a PERT chart for a software development.

| Activity                                           | Preceding activities                                             | Optimistic Time (O) | Realistic Time (R) | Pessimistic Time (P) |
|----------------------------------------------------|------------------------------------------------------------------|---------------------|--------------------|----------------------|
| <b>A) Establish project</b>                        | -                                                                | 4                   | 5                  | 12                   |
| <b>B) Establish customer requirements</b>          | A) Establish project                                             | 2                   | 3                  | 4                    |
| <b>C) Produce software specification documents</b> | B) Establish customer requirements                               | 6                   | 8                  | 22                   |
| <b>D) Write test plans</b>                         | C) Produce software specification documents                      | 4                   | 6                  | 8                    |
| <b>E) Write code</b>                               | C) Produce software specification documents                      | 3                   | 4                  | 5                    |
| <b>F) Developer testing</b>                        | E) Write code                                                    | 2                   | 4                  | 6                    |
| <b>G) System testing</b>                           | D) Write test plans<br>F) Developer testing                      | 2                   | 3                  | 4                    |
| <b>H) Write manuals</b>                            | C) Produce software specification documents<br>G) System testing | 5                   | 7                  | 15                   |

*Table 1: IS Activities*

- Calculate the Expected Time (ET) for each activity. [2 marks]
- Draw a network diagram for the IS project shown in *Table 1*. [3 marks]
- For each activity, calculate its earliest completion time (TE), latest completion time (TL) and slack time (ST). Label ET, TE, TL and ST on the network diagram. [4 marks]
- List the critical path for this project and shade in the network diagram. [1 mark]

**Continued.....**

**QUESTION 3 (10 MARKS)**

- a) A designer must design forms and reports based on the design specifications that will be inputs to the system implementation phase. What are the **THREE (3)** sections of a design specifications? [3 marks]
- b) Atiqah's e-commerce website has suffered from some design flaws that has turned off many potential customers. Suggest at least **TWO (2)** guidelines that Atiqah's web developer should follow when designing forms or reports for a website. [2 marks]
- c) Contrast between menu interaction and natural language interaction. [5 marks]

**QUESTION 4 (10 MARKS)**

- a) List **SIX (6)** major activities in system implementation and provide at least **ONE (1)** example of deliverable for each activity. [3 marks]
- b) Describe **FOUR (4)** factors that influencing maintainability. [2 marks]
- c) Briefly explain **THREE (3)** reasons why system analyst uses open-ended questions during interviewing or survey. [3 marks]
- d) Maintenance is the longest phase in SDLC. List and describe all type of maintenance. [2 marks]